36833

S/137/62/000/004/156/201
A060/A101

1,2300

AUTHOR: Lebedev, A. I.

TITLE: Investigation of the productivity characteristics of manual argon-arc welding of an aluminum-magnesium alloy by means of non-consumable electrodes

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 7, abstract 4E31 ("Tr. Leningr. politekhn. in-ta", 1961, no. 216, 130 - 141)

TEXT: For efficient planning of the technological welding process it is necessary to know exactly the quantities characterizing the productivity of that process; the build-up coefficient of the additional weld-metal, the effective efficiency of the heating process of the base metal by the arc η_u, and the thermal efficiency of the melting process of the base metal η_t. The results are cited of the determination of these coefficients using manual argon-arc welding of the Al-Mg alloy АМг -5 В (AMg-5V). All the welding operations were carried out with the apparatus for manual argon-arc welding with a non-consumable electrode УДАР -300 (UDAR-300). The following conclusions are drawn: 1) The build-up

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coefficient of the additional weld-metal under welding with a non-consumable electrode increases considerably as the welding current is increased. 2) In the use of argon-arc welding with a non-consumable electrode the η_u constitutes 50% of the η_u of welding with a consumable electrode. 3) The η_u is decreased as the welding current is increased as result of the increase in the radiation losses. 4) The η_t varies between broad limits as a function of the thickness of the material welded and the welding schedule.

V. Tarisova

[Abstracter's note: Complete translation]

Card 2/2

BANNYY, Nikolay Pavlovich; LEBEDEV, A.I., red.; PINEGIN, I.I., red. izd-va; KARASEV, A.I., tekhn. red.

[Technical and economic calculations in ferrous metallurgy] Tekhniko-ekonomicheskie raschety v chernoi metallurgii. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1962. 380 p. (MIRA 15:2)
(Iron--Metallurgy) (Steel--Metallurgy)
(Steel industry--Accounting)

VINOGRAD, Mariya Ippolitovna; LEBEDEV, A.I., red.; OZERETSKAYA, A.L., red. izd-va; VAYNSHTEYN, Ye.B., tekhn. red.

[Inclusions in steel and its properties]Vkliucheniia v stali i ee svoistva. Moskva, Metallurgizdat, 1963. 252 p. (MIRA 16:4)

(Steel--Inclusions) (Steel--Metallography)

LEBEDEV, A.I.

Effect of the mechanical properties of metals on longitudinal deformation during welding. Trudy LPI no.229:56-64 '63.
(MIRA 17:9)

SOKOLOVSKIY, Petr Izrailevich; LEBEDEV, A.I., red.

[Reinforcement steels] Armaturnye stali. Moskva, Izd-vo Metallurgiia, 1964. 207 p. (MIRA 17:6)

ACCESSION NR: AT4038447 S/2563/63/000/229/0056/0064

AUTHOR: Lebedev, A.I.

TITLE: Effect of the mechanical properties of metals on their longitudinal deformations during welding.

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy*, no. 229, 1963. Svarochnoye proizvodstvo (Welding production), 56-64

TOPIC TAGS: welding, deformation, longitudinal deformation, mechanical property, steel, low carbon steel, aluminum alloy, magnesium alloy, titanium alloy

ABSTRACT: Residual deformations during welding are caused by the same factors as in any process involving non-uniform heating. In the region of a weld seam, plastic compressive deformations arise because the thermal expansion of the fibers in the part subjected to welding is restrained by the resistance of the less heated adjacent material or by an external restraint. Since a variety of aluminum, magnesium, and titanium alloys are currently used in welded structures, and since the yield point of these materials depends markedly on temperature, the theory of Prof. N.O. Okerblom has been expanded to apply to metals other than steel, using dimensionless parameters according to a method developed by K.M. Gatovskiy. The temperature field is expressed by the equation of N.N.Ry*kalin, modified for

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ACCESSION NR: AT4038447

dimensionless parameters, and an expression is derived for the plastic compressive deformation of a fiber. Some of the physical properties (linear thermal expansion, yield point, modules of elasticity, etc.) of some alloys commonly used in welded structures are tabulated. These results demonstrate variations in the temperature dependence of the mechanical properties which influence the character of the plastic deformations. For instance, titanium alloys, in which the yield point decreases sharply with an increase in temperature, may exhibit twice the plastic deformation of steel. For computing the sum of the derived plastic deformations, the expression

$$\Sigma\Lambda = \frac{\Sigma\lambda_F}{0.484\,\frac{\alpha}{C_\gamma}q_n}$$

was used, where $\Sigma\lambda_F$ is the sum of the residual plastic deformations. The high S values of steel result in rapid normalization of the yield point on cooling, relatively high tensile deformations and consequently residual stresses in the weld seam which may equal the yield point. In titanium alloys, however, restoration of the yield point on cooling lags with respect to the development of plastic tensile deformations. Therefore, the residual stresses in titanium welds remain below the yield point. Real deformations during the welding

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ACCESSION NR: AT4038447

of plates with finite rigidity may lead to a considerable reduction in the sum of plastic compressive deformations. The author demonstrates how to account for the finite rigidity when computing residual strains and stresses. It is concluded that the general theory of welding deformations and stresses can be applied to determine welding deformations of materials, and mechanical properties of which depend markedly on the temperature. Orig. art. has: 5 figures, 2 tables, and 9 formulas.

ASSOCIATION: Leningradskiy politekhnicheskiy institut im. M.I. Kalinina (Leningrad Polytechnical Institute)

SUBMITTED: 00 DATE ACQ: 12Jun64 ENCL: 00

SUB CODE: MM NO REF SOV: 005 OTHER: 000

Card 3/3

L 14974-65 EWT(m)/EPF(c)/EPF(n)-2/EPR/EWP(k)/EWP(b)/EWP(v)/EWP(t) Pf-4/Pr-4/
Ps-4/Pu-4 IJP(c)/ASD(f)-2/ASD(m)-3 JD/HM/MLK

ACCESSION NR: AT4048085 S/0000/64/000/000/0273/0282

AUTHOR: Petrov, G.L., Shchipkov, M.D., Lebedev, A.I., Yazy*kov, A.S. B

TITLE: Some problems of welding titanium and titanium alloys 18 27

SOURCE: Soveshchaniye po metallurgii, metallovedeniyu i primeneniyu titana i yego splavov. 5th, Moscow, 1963. Metallovedeniye titana (Metallography of titanium); trudy* soveshchaniya, Moscow, Izd-vo Nauka, 1964, 273-282

TOPIC TAGS: titanium, titanium alloy, titanium alloy welding, titanium welding, argon arc welding 27

ABSTRACT: The weld seams of titanium and titanium alloys must pass very rigid requirements, both in relation to the weld metal and accuracy. The Kafedra svarochnogo proizvodstva Leningradskogo politekhnicheskogo instituta im. M.I. Kalinina (Welding Department of the Leningrad Polytechnical Institute) has therefore investigated the sources of oxygen and hydrogen saturation of the titanium seams, and the possibility of redistribution of these gases at the boundaries of the α and β crystals during welding and of residual deformations during argon arc welding of titanium alloys. The sources of oxygen and hydrogen are water vapor and/or the admixture of the inert gases used during welding. It was found that protection by argon does not prevent titanium oxidation at all the

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temperatures possible during fusion welding, even when there is no air present. During argon arc welding, the moisture in the argon may be the source of hydrogen penetration. This moisture can be eliminated by using titanium shavings. On the basis of tests, it is noted that the initial hydrogen concentration in the filling wire greatly affects the hydrogen concentration in the welded metal. On the basis of B.A. Movchan's equation and calculations according to N. N. Rikalin and G. L. Petrov, it is found that the maximum difference in oxygen and hydrogen concentration at the phase boundary is very low. The redistribution of oxygen and hydrogen may be only local. Coarse methods of testing the base metal, heated metal and weld seam did not show any increase in hardness. Theoretical calculations performed according to N.O. Okerblom gave results lower than those obtained during the tests. This is explained by the high value of the ratio between the yield point and rigidity modulus at normal temperature and its sharp drop as the temperature increases. The paper concludes that hydrogen may either be introduced into or removed from the titanium and titanium alloys depending on the partial pressure of the hydrogen in the gas phase. When the argon used for welding is additionally purified, there is no hydrogen saturation. Pure argon thus ensures satisfactory quality

L 14974-65
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of the welded metal. The AN-T3 flux does not protect the surface against oxygen. Argon arc welding thus ensures the best weld seams without requiring redistribution of oxygen and hydrogen at the weld. Residual deformation during the argon arc welding of titanium alloys is determined by the specific linear energy of welding, and by the thermal, physical and mechanical properties of the welded alloy. The proposed method of calculation permits one to find the residual deformation during argon arc welding of titanium alloys with sufficient accuracy. Orig. art. has: 6 figures, 3 tables and 7 equations.

ASSOCIATION: Kafedra svarochnogo proizvodstva Leningradskogo politekhnicheskogo instituta im. M.I. Kalinina, (Welding Department, Leningrad Polytechnical Institute)

SUBMITTED: 15Jul64 ENCL: 00 SUB CODE: MM

NO REF SOV: 010 OTHER: 000

Card 3/3

L 13921-65 EWT(m)/T/EWA(m)-2 ESD(t)
ACCESSION NR: AP4047884 S/0056/64/047/004/1199/1201

AUTHORS: Govorkov, B. B.; Denisov, S. P.; Lebedev, A. I.; Minarik, Ye. V.; Kharlamov, S. P.

TITLE: Photoproduction of neutral pions by protons at 210 MeV

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 4, 1964, 1199-1201

TOPIC TAGS: photoproduction, neutral pion, gamma proton interaction, dispersion relation, photoproduction cross section

ABSTRACT: In view of its significance to a complete phase shift analysis and the information it can yield on the applicability of dispersion theory, the process $\gamma + p \rightarrow p + \pi^0$ was investigated and its differential cross section was measured for 6 meson emission angles at photon energy 210 ± 14 MeV in the laboratory system. The investigations were carried out in the bremsstrahlung beam of the

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FIAN 265-MeV synchrotron. The neutral pions were observed by counting the two decay γ quanta in coincidence. The apparatus used was described by the authors previously (ZhETF v. 44, 1463, 1963, except that a liquid hydrogen target was used in an ordinary glass Dewar with wall thickness 1 mm. The hydrogen capacity of the Dewar was 4 liters, so that continuous measurements could be made for 12 hours. The differential cross sections for the production of π^0 mesons from protons were calculated from the measured yield by the method described by Govorkov et al. (ZhETF v. 44, 878, 1963). Comparison of the results with those by others showed good agreement. In comparing the data with the cross sections calculated on the basis of the dispersion relation it is concluded that the data presented can be described within the framework of the bipion model without introduction of a subtraction constant in the $\gamma + \pi \rightarrow \pi + \pi \rightarrow \rightarrow N + \bar{N}$ channel. "The authors are grateful to A. M. Baldin for helpful discussions and R. S. Uvarov for assistance with the numerical calculations." Orig. art. has: 1 figure.

L 13921-65
ACCESSION NR: AP4047884

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute, Academy of Sciences SSSR)

SUBMITTED: 15Apr64 ENCL: 00

SUB CODE: NP NR REF SOV: 009 OTHER: 005

Card 3/3

L 16678-65 EWT(m)/T/EWA(m)-2 SSD/AFWL

ACCESSION NR: AP4045625 S/0020/64/158/002/0309/0312

AUTHOR: Adamovich, M. I. ; Larionova, V. G. ; Lebedev, A. I. ; Kharlamov, S. P. ; Yagudina, F. R.

TITLE: Analysis of photogeneration of positive pions at photon energies of 175 to 230 Mev

SOURCE: AN SSSR. Doklady*, v. 158, no. 2, 1964, 309-312

TOPIC TAGS: photogeneration, positive pion, γ-π-p interaction, nuclear reaction

ABSTRACT: The comparison of experimental data on photogeneration of positive pions in hydrogen near the threshold, with the theoretical estimation is important for the evaluation of various effects instrumental in the process, particularly the effect of resonance π -π interaction (ρ meson). The authors conducted such a comparison in a wide range of angles and energies. The experiment was made with the 260 Mev synchrotron of the Physical Institute of AN SSSR using piles of nuclear photoemulsions for detection. The π-μ-decays were recorded, and also the ends of the -meson and of pions traces. The differential cross section for

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ACCESSION NR: AP4045625

3

the photogeneration of π^+ was measured for 9 angles at photon energies from 175 to 230 Mev, in 5 Mev steps. The agreement with the theoretical estimation depends on the chosen constant of the γ-π-ρ interaction. The authors are grateful to Prof. P. A. Cherenkov for his interest, and to R. Uvarova for numerical calculations. Orig. art. has: 3 figures, 1 table

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Institute of Physics, Academy of Sciences, SSSR)

SUBMITTED: 01Mar64 ENCL: 00

SUB CODE: NP NO REF SOV: 001 OTHER: 007

Card 2/2

GOVORKOV, B.B.; DENISOV, S.P.; LEBEDEV, A.I.; MINARIK, Ye.V.; KHARLAMOV, S.P.

Photoproduction of neutral π-mesons on 210 Mev. protons. Zhur. eksp. i teor. fiz. 47 no.4:1199-1201 O '64. (MIRA 18:1)

1. Fizicheskiy institut imeni P.N. Lebedeva, AN SSSR.

L 41012-65 EWT(m)/T/EWA(m)-2
ACCESSION NR: AP5007709 S/0367/65/001/001/0092/0095

13
12
4

AUTHOR: Baldin, A. M.; Govorkov, B. B.; Denisov, S. P.; Lebedev, A. I.

TITLE: Near threshold photoproduction of neutral pions 19

SOURCE: Yadernaya fizika, v. 1, no. 1, 1965, 92-95

TOPIC TAGS: neutral pion production, pion photoproduction, electrical dipole photoproduction, near threshold pion production

ABSTRACT: The correct determination of the physical parameters of low-energy pions acquired special importance in connection with the hypothesis coucerning the π° -meson (A. M. Baldin, Nuovo Cim., 8, 569, 1958; A. M. Baldin, P. Kabir, DAN SSSR, 122, 361, 1958; A. M. Baldin, A. A. Komar, Proc. Int. Conf. on High Energy Physics at CERN, 1962, p. 657). Experimental data on the $\gamma + p \to p + \pi^\circ$ reaction have been analyzed in the vicinity of the threshold so as to determine the electrical dipole amplitude E for π°-meson photoproduction. Two methods of determining E lead to different values for this quantity. The authors remark in a note added in proof on 19 December 1964 that in view of the paper by Yu. D. Prokoshkin submitted to the 12th International Conference on High Energy Physics

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L 41012-65
ACCESSION NR: AP5007709

(Dubna, August 1964), which seems to rule out the existence of the π_0° - meson, it is even more important to determine the correct S-wave π° photoproduction amplitude on protons in the future. This could then eliminate the discrepancies found in the article. Orig. art. has: 9 formulas.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute of the Academy of Sciences, SSSR)

SUBMITTED: 20Jul64 ENCL: 00 SUB CODE: NP

NO REF SOV: 006 OTHER: 002

Card 2/2

LEBEDEV, A.I., KOLOMENSKIY, A.A. (U.S.S.R.)

Radiation and relativistic motion in electron synchrotrons

CERN-Symposium on High Energy Accelerators and Pion Physics

Geneva 11-23 June 56
In Branch #5

LEBEDEV, A.I

AUTHOR: Baldin, A.M., Lebedev, A.I.

56-5-23/46

TITLE: The Interaction of Slow π-Mesons With Nuclei (Vzaimodeystviye medlennykh π-mezonov s yadrami)

PERIODICAL: Zhurnal Eksperim. i Teoret.Fiziki, 1957, Vol. 33, Nr 5, pp. 1221-1226 (USSR)

ABSTRACT: The influence exercised by the interaction effect of charged mesons with nuclei on the meson-forming cross section is investigated for the case in which the wave length of the meson exceeds the measurements of the nucleus. Between the cross section for photo-forming of the meson, the displacement and width of mesoatomic levels, a connection could be shown theoretically.
From the theoretical deliberations stated it follows that the mechanism of the reabsorption of the mesons cannot explain the dependence of the photo-forming cross section on the atomic number. Further, yet another mechanism must be assumed which forbids the forming of mesons within the nucleus.
The finite order of a nucleus exercises an important effect upon photo-forming of slow mesons, because it changes the effect of

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The Interaction of Slow π-Mesons With Nuclei 56-5-23/46

Coulomb's field considerably. There are 1 figure and 13 references, 3 of which are Slavic.

ASSOCIATION: Physics Institute imeni P.N.Lebedev AN USSR (Fizicheskiy institut im.P.N.Lebedeva AN SSSR)

SUBMITTED: May 4, 1957

AVAILABLE: Library of Congress

Card 2/2

AUTHORS: ..., ... I., Silant'yev, A. N., Yutlandov, I. A.

TITLE: γ-Spectrum of Lu^{171} (γ-Spektr Lu^{171})

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1958, Vol. 22, Nr 7, pp. 839-840 (USSR)

ABSTRACT: The isotope Lu^{171} was produced by the irradiation of a tantalum target with fast protons. Then the rare earths were separated from the tantalum target by chemical methods. Lu was separated from the rare earths by chromatographic methods. The main activity of the preparation originates from $Lu^{169, 170}$. Lu^{169} is transformed into Yb^{169} by the decay. Yb^{169}, on the other hand, decays with a half-life of 30 days into Tu^{169}. The half-life of Lu^{169}, and Lu^{170} is about 2 days. In order to purify Lu from these isotopes it was stored for about one month and then purified chromatographically from Yb. This preparation essentially only contained Lu which exhibited a half-life of about 8 days. Almost no radioactive substances with another half-life were contained in the preparation. The γ-spectrum of the preparation was investigated by means of a scintillation spectrometer. The spectrum obtained was decomposed into com-

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γ-Spectrum of Lu^{171}

ponents according to the method proposed by D. Kaeder (Kader) (Ref 7). The lines at 45o and 55o keV are within the range of the Compton "tail" (khvost) of the strong γ-lines at 65o and 73o keV. The γ-line at 75 keV is located in the decreasing part of the strong line of the characteristic radiation. In the measurement of the soft γ-radiation by means of the scintillation spectrometer two peaks were obtained in the output: One main peak corresponding to the energy of the incident γ-radiation and a side-peak which is shifted towards small energies with respect to the main peak. It was found that the relative intensities of the γ-radiation at 65 + 75,8, 90,6 and 181,7 keV well agree with the values computed in references 4 and 5. The investigation was performed in the laboratory of G. V. Gorshkov. A. N. Murin made available the Lu-preparation. There are 1 figure, 1 table, and 9 references, 7 of which are Soviet.

ASSOCIATION: Radiyevyy institut im. V.G.Khlopina Akademii nauk SSSR (Radium Institute imeni V.G. Khlopin, AS USSR)

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21(7), 24(5)

AUTHOR: Lebedev, A. I.

SOV/56-35-4-40/52

TITLE: On the Breadth of π -Meson Atom Levels (O shirine urovney π-mezonnykh atomov)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, № 4, pp 1045-1047 (USSR)

ABSTRACT: If the interaction between slow negative pions and a nucleus is considered to be a disturbance of the Coulomb (Kulon)-potential of a point source (Refs 1, 2), it is possible to estimate the potential of meson-nucleus interaction. The total displacement of the mesic atom level in the first perturbational order is

$$\Delta E_{nl} = \int_0^\infty |\Psi_{nl}(r)|^2 v(r)\, r^2 dr.$$

Here $v(r)$ denotes the deviation of the interaction potential from Coulomb interaction. $\Psi_{nl}(r)$ denotes the wave function of the coupled state in the Coulomb field. Also an expression for the phase τ_{kl} of the

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scattering of a slow pion by a nucleus is written down. The above-mentioned expressions for $\Psi_{nl}(r)$ and τ_{kl} are specialized for levels with $r_Z/R_{nZ} \ll 1$, to which the perturbation theory is still applicable. By means of the formulae thus obtained it is possible to find a simple connection between the shifting of the level in the mesic atom and the phase of the scattering of a low-energy meson by a nucleus. The correlation derived here is a special case of a general correlation derived by M. Byers (Bayers) (Ref 3). The author then deals with the imaginary part Im v of the interaction potential. This imaginary part broadens the levels (especially level 1S) in the mesic atoms as also causes the absorption of pions scattered by nuclei. However, this imaginary part, which is responsible for the absorption of slow mesons, is only small. If the breadth of the level 1S is known, it is possible to carry out an exact estimation of the life of the negative pion on this level. The author thanks A. M. Baldin for discussing the problems dealt with in this paper. There are 8 references, 3 of which are Soviet.

On the Breadth of π^--Meson Atom Levels SOV/56-35-4-40/52

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physical Institute imeni P. N. Lebedev of the Academy of Sciences USSR)

SUBMITTED: June 14, 1958

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83747
S/056/60/038/004/040/048
B006/B056

24.6900

AUTHORS: Lebedev, A. I., Petrun'kin, V. A.

TITLE: The Problem of the Production of π-Mesons in πN Collisions

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 4, pp. 1337 - 1339

TEXT: The experimentally determined momentum distributions of the pions from the $\pi + N \rightarrow 2\pi + N$ reaction at kinetic energies of 1.0 and 1.4 Bev could hitherto not be satisfactorily described theoretically, except in Ref. 5 where ππ-resonance interaction had been assumed. In the present "Letter to the Editor", the authors show that also without assuming ππ-interaction, agreement between theory and experiment may be improved by proceeding from the statistical theory when calculating the pion spectra, and by taking the finite widths of the isobaric states resulting from the decay into account. The momentum distributions of mesons thus obtained are given in the c.m.s. in Figs. 1,2 for energies of 1.0 and 1.4 Bev of the incident pions. For comparison, the experimentally determined distributions and those obtained theoretically when taking

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The Problem of the Production of π-Mesons in πN Collisions

S/056/60/038/004/040/048
B006/B056

ππ-resonance interaction into account, are given. It is found that the pion momentum distribution calculated only with consideration of the finite width of the isobaric state (3/2, 3/2, 1) is by no means less satisfactory than the distribution obtained by V. I. Rus'kin (Ref. 5) for ππ-resonance interaction, in the case of which a new particle, Π, having the mass 0.47 (which decays into two pions) must be introduced. The authors thank I. A. Yegorova for carrying out computations. There are 2 figures and 7 references: 3 Soviet and 3 US.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Institute of Physics imeni P. N. Lebedev of the Academy of Sciences USSR)

SUBMITTED: January 3, 1960

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26720
S/056/61/041/005/035/038
B109/B102

24.6700

AUTHORS: Baldin, A. M., Lebedev, A. I.

TITLE: A peculiarity of the photoproduction of threshold π^0-mesons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 5(11), 1961, 1688-1689

TEXT: Experimental data on the photoproduction of π^0-mesons are not fully consistent with the values expected from theory. This is due mainly to the uncertain evaluation of the dispersion integral. The authors studied the region of angles near $\Theta = 0^0$, where the discrepancy between experiments and theory becomes particularly obvious. In this region the differential π^0 photoproduction cross section is highly sensitive to changes of the dispersion integrals. The photoproduction cross section is given by

$$\left.\frac{d\sigma}{d\Omega}\right|_{\theta=0^\circ} = \frac{q}{k}\left|F_1(q^2, 0=0^\circ) - F_2(q^2, 0=0^\circ)\right|^2, \qquad (1)$$

and the empirical amplitude equation

A peculiarity of the photoproduction...

$$(F_1 - F_2)_{\theta=0^\circ} = \left[\sqrt{k\omega}(-0{,}3 + 0{,}7q) + i \cdot 2{,}41 \cdot \frac{2}{3}(a_1 - a_3) \times \right.$$
$$\left. \times \left(1 - \frac{q^2}{3\omega^2}\right)\sqrt{qq_+}\right] \cdot 10^{-2}, \qquad (2$$

is written down. $a_1 - a_3 = 0.245$. q and k, respectively, denote the momenta of meson and photon in the c.m.s., F_1 and F_2 are the invariant amplitudes of photoproduction, q_+ is the momentum of the π^+-mesons, $\omega = \sqrt{1+q^2}$, $\hbar = \mu = c = 1$. Eq. (2) shows that for $q_0^2 \sim 0.18$, the quantity $\mathrm{Re}(F_1 - F_2)_{\theta=0^\circ}$ vanishes, so that the cross section is determined entirely by the small imaginary part of the amplitude which is connected with the scattering of charged mesons. Conclusions: (1) The function $(d\sigma/d\Omega)_{\theta=0^\circ} = f(E_\gamma)$ has a clear minimum. This is consistent with the results of G. K. Ustinova (ZhETF, 41, 583, 1961). (2) The position of this minimum is highly sensitive to changes of the dispersion integral. Therefore, the influence of $\pi\pi$ interaction on meson photoproduction is rather strong. When, for instance, the contribution of meson-meson

A peculiarity of the photoproduction... interaction amounts to $\Lambda/e = \pm 2$, $\mathrm{Re}(F_1 - F_2)_{\theta=0^\circ}$ will vanish at $q_o^2 \approx 0.05$ (+) and at $q_o^2 \approx 0.30$ (-). This explains the discrepancies between experiments and theory. Moreover, this effect has a considerable influence upon the ratio $(d\sigma_{dd}/d\Omega)/(d\sigma/d\Omega)$ at $\theta = 0^\circ$, where $d\sigma_{dd}/d\Omega$ is the cross section of the process $\gamma + d \to d + \pi^0$. In momentum approximation

$$\left[\frac{d\sigma_{dd}}{d\Omega} \Big/ \frac{d\sigma}{d\Omega}\right]_{\theta=0^\circ} = \frac{8}{3}\left|\frac{V}{V+S}\right|^2 I^2 \qquad (3)$$

is valid. V and S are the isovectorial and isoscalar parts of the photoproduction amplitude, respectively. $I^2 \approx 1$ is the deuteron form factor. When $q \approx q_o$, $d\sigma_{dd}/d\Omega$ will depend on S to a considerable extent. This may be helpful in understanding some phenomena in $\pi\pi$ interaction which is connected with a two-meson intermediate state which contributes to S only. There are 1 figure and 5 references: 2 Soviet and 3 non-Soviet. The three references to English-language publications read as follows: A. Logunov, A. Tavkhelidze, L. Solovyov, Nucl. Phys., 4, 427,

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26720
S/056/61/041/005/035/038
B109/B102

A peculiarity of the photoproduction...

1957; G. F. Chew, M. L. Goldberger, F. E. Low, Y. Nambu, Phys. Rev., 106, 1345, 1957; J. Hamilton, W. S. Woolcock, Phys. Rev., 118, 291, 1960; J. S. Ball, Phys. Rev. Lett., 5, 73, 1960.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Institute of Physics imeni P. N. Lebedev of the Academy of Sciences USSR)

SUBMITTED: July 20, 1961

Card 4/4

LEBEDEV, A.I.

BALDIN, A. M.; LEBEDEV, A. I.

"Photoproduction of π -Mesons near Threshold"

report presented at the Intl. Conference on High Energy Physics, Geneva, 4-11 July 1962

43376

S/056/62/043/005/040/058
B125/B104

AUTHORS: Gerasimov, S. B., Lebedev, A. I., Petrun'kin, V. A.

TITLE: On the theory of neutron scattering by the Coulomb field

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 5(11), 1962, 1872-1879

TEXT: The scattering of a neutron with regard to the electrical formfactor of the neutron and the contact interaction of the neutron with the nucleus is investigated in first and second perturbation-theoretical approximation. The behavior of a nucleon in the electromagnetic field is described phenomenologically by the matrix element

$$\langle p'|j_\mu|p\rangle = i\bar{u}(p')[g_{1n}(q^2)\gamma_\mu + g_{2n}(q^2)\sigma_{\mu\nu}q_\nu]u(p),$$
$$q = p' - p, \quad \sigma_{\mu\nu} = \tfrac{1}{2}i(\gamma_\mu\gamma_\nu - \gamma_\nu\gamma_\mu), \quad g_{1n}(0) = 0, \quad g_{2n}(0) = \mu_n. \qquad (1).$$

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The spinors $\bar{u}(p')$ and $u(p)$ refer respectively to the final and the initial state of the neutron with the momentum p' and p. Here $g_{1n}(q^2)$ designates the electrical formfactor of the neutron, $g_{2n}(q^2)$ its magnetic formfactor. The scattering of the neutrons in the Coulomb field of the nucleus and the lowest-order radiation corrections are described by the diagrams of Fig. 1. The diagram a describes the interaction of the magnetic moment with the electric field of the nucleus in first perturbation-theoretical order. The diagram б describes the second Born approximation of this interaction. The contribution of diagram B differs from the contribution of the polarizability of the meson cloud by 1% at most. Despite the non-renormalizability of the theory with the current (1), the diagram is considered in the usual way by using experimental values for the abnormal magnetic moment $\mu_n = \lambda e\hbar/2Mc$, $\lambda = -1.91$ of the neutrons. Possibly, also the diagrams of 6th order with respect to e contribute substantially to the electromagnetic scattering of nucleons on nuclei. The first two members of the differential cross section

S/056/62/043/005/040/058
B125/B104

$$\frac{d\sigma}{d\Omega} = \frac{F_n^2(q)}{4p^2v^2\sin^4(\theta/2)}\, g_{1n}^2(q^2)\left(1-\frac{v^2}{c^2}\sin^2\frac{\theta}{2}\right)+\frac{[F_n^2(q)\, g_{2n}^2(q^2)}{\sin^2(\theta/2)}+ \qquad (5)$$
$$+\frac{p^2Z^4e^4}{\cos^2(\theta/2)}\left[\pi\left(1-\sin\frac{\theta}{2}\right)^2+4\ln^2\sin\frac{\theta}{2}\right].$$

of the scattering of neutrons calculated according to R. Dalitz (Proc. Roy. Soc. 509, 1951) correspond to the diagram a and the third member corresponds to the diagram δ. The difference of the second member of (5) from the non-relativistic formula by J. Schwinger (Phys. Rev., 73, 407, 1948) is conditioned by the automatical consideration of the interaction $i(\mu_n/Mc)(\vec{E}\,\vec{p})$. μ_n designates the abnormal magnetic moment of the neutron. This difference becomes most evident if angles are large. The third member in (5) depends linearly on the kinetic energy of the neutron and can contribute substantially if energies are of ~100 Mev. The total cross section of the production of an electron-positron pair on a neutron as a function of the photon energy k_0 takes the form

$$\sigma_n = 16e^2(\mu_n/2M)^2\left[\tfrac{4}{3}\ln^2 2k_0-\tfrac{26}{9}\ln 2k_0+\tfrac{151}{54}-2\pi^2/9\right]. \qquad (9)$$

Card 3/5

in the ultrarelativistic case. By means of dispersion relations, the contribution

$$\mathrm{Re}\, f(k_0) = k_0^2 \gamma(k_0) = \frac{k_0^2}{2\pi^2} \int\limits_{k_{\text{пор}}}^{\infty} \frac{\sigma_n(k_0')}{k_0'^2 - k_0^2} dk_0'. \qquad (10)$$

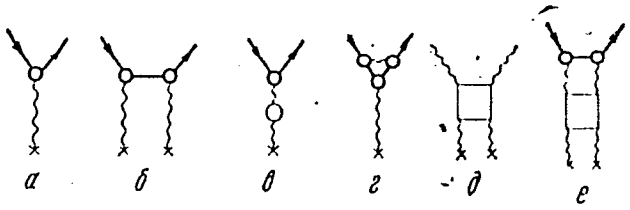
of the pair production to the amplitude of the γ n-scattering is obtained. The contribution of the diagrams 1 0 to the low-frequency limit of the n-scattering is 1% of the contribution of the polarizability of the meson cloud of the neutron. It is shown that the additional interaction potential $U_{int} = -(1/2)\alpha_n' E_0^2$ is conditioned by non-linear electrodynamic effects if the distance R between neutron and nucleus is large. $\alpha_n' = \gamma a^{-3}$ holds and it is assumed that $a \sim 0.5\ \hbar/mc$. Deviations observed in the experimentally determined cross sections of the neutron scattering on nuclei from those determined theoretically can not be explained by the electrodynamic effects investigated. Further, if U_{int} is expanded in powers of R^{-1} the members of higher order can become essential for experimental results. This can lead to a strong energy dependence of the cross section in the range of the

photo-pairproduction threshold, in collisions of a neutron with a nucleus. There are 3 figures.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR)

SUBMITTED: June 8, 1962

Fig. 1: The diagrams of the discussed processes.



GOVORKOV, B.B.; LEBEDEV, A.I.

Conference on Interactions between High-energy Photons. Atom. energ. 15 no.5:436-438 N '63. (MIRA 16:12)

L 10236-63 EDS/EWT(m)--AFFTC/ASD--IJP(C)

ACCESSION NR: AP3000035 S/0056/63/044/005/1463/1469

AUTHOR: Govorkov, B. B.; Denisov, S. P.; Lebedev, A. I.; Minarik, Ye. V. 60 54

TITLE: High partial waves in the photoproduction of neutral pions on protons

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 44, no. 5, 1963, 1463-1469

TOPIC TAGS: Neutral pion photoproduction, threshold reactions, partial waves

ABSTRACT: The angular distribution of neutral pions produced on protons by photons of 181 MeV energy was measured with an aim at comparing directly the experimental results with the exact dispersion-relation calculations, which hitherto has met with some difficulties. An increase in the experimental accuracy and a determination of experimental quantities that can be calculated without the need for taking the dispersion integrals into account can help account for the remaining disparity. The authors describe an accurate measurement of the angular distributions of the neutral-pion photoproduction on protons near threshold, and give an analysis of the results from the point of view of reconciliation of experiment with dispersion-relation calculations. The

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L 10236-63
ACCESSION NR: AP3000035

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neutral pions were registered by simultaneously counting the two decay photons by scinitillation-counter telescopes. The net results were more accurate angular distributions for neutral-pion photoproduction near threshold, better agreement with the one-dimensional dispersion-relation calculation, and detection of some disparity between the experimental data and the dispersion-relation calculations if no account is taken of the resonant meson states. This may indicate that the resonance meson states make some contribution to the investigated process. "The authors thank P. A. Cherenkov for interest in this work, A. M. Baldin for valuable advice, A. V. Kutsenko for help in the work with the computer, I. A. Yegorov for numerical estimates, A. G. Gerasimova for help in carrying out the experiments, and the whole synchrotron crew of the Physics Institute of the Academy of Sciences." There are five figures and three tables.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva, Akademii nauk SSSR (Physics Institute, Academy of Sciences)

SUBMITTED: 28Nov63 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: PH NR REF SOV: 007 OTHER: 008

Card 2/2

L 4384-66 EWT(m) DIAAP

ACC NR: AP5020265

UR/0367/65/002/001/0135/0143

AUTHOR: Adamovich, M. I.; Larionova, V. G.; Lebedev, A. I.; Kharlamov, S. P.; Yagudina, F. R.

TITLE: Determination of the isotopic spin components of the $\gamma + N \rightarrow N + \pi$ amplitude at threshold

SOURCE: Yadernaya fizika, v. 2, no. 1, 1965, 135-143

TOPIC TAGS: gamma scattering, scattering cross section, differential cross section, proton scattering, photonuclear reaction

ABSTRACT: The differential cross sections for the process $\gamma + p \rightarrow n + \pi^+$ for laboratory-system pion angles 16, 24, 36, 56, 64, and 76° have been measured in the photon energy region 165-230 MeV. The experiments were performed with the FIAN (Physics Institute of the Academy of Sciences) 265-Mev electron synchrotron, using a liquid-hydrogen target. The pion detector was a stack of NIKFI BK-600 nuclear pellicles. The bremsstrahlung flux was measured with a quantum meter. The positive-pion photoproduction amplitude in the S state was obtained for zero pion momentum by extrapolating the empirical dependence of the cross section on the pion momentum to the threshold. Data on the process $\gamma + n \rightarrow p + \pi^-$ were analyzed in the same manner and the corresponding negative-pion photoproduction amplitude obtained. These amplitudes, together with the similar amplitude x for neutral-pion photoproduction, are used to

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L 4384-66

ACC NR: AP5020265

find the isoscalar and isoscalar parts of the photoproduction amplitudes, which are compared with the theoretical predictions. The agreement is not particularly good, mostly because of the low accuracy with which the S-wave photoproduction amplitudes are known. "The authors thank Professor P. A. Cherenkov and A. M. Baldin for their interest and for a discussion of this work." Orig. art. has: 5 figures, 8 formulas, and 4 tables.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute, Academy of Sciences, SSSR)

SUBMITTED: 17Jan65 ENCL: 00 SUB CODE: NP

NR REF SOV: 002 OTHER: 013

Card 2/2

LEBEDEV, A.I.; PETRUN'KIN, V.A.

Magnetic polarizability of π-mesons and K-mesons. Izd. fiz. 2 no.4:730-732 O '65. (MIRA 18:11)

1. Fizicheskiy institut im. P.N. Lebedeva AN SSSR.

L 12007-66 EWT(m)/T/EWA(m)-2

ACC NR: AP6001779 SOURCE CODE: UR/0386/65/002/010/0490/0494

AUTHOR: Adamovich, M. I.; Larionova, V. G.; Lebedev, A. I.; Kharlamov, S. P.; Yagudina, F. R.

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Determination of the $\gamma\pi\rho$ interaction constant

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 2, no. 10, 1965, 490-494

TOPIC TAGS: Gamma interaction, meson interaction, photon scattering, dispersion equation

ABSTRACT: The authors attempt an indirect determination of the $\gamma\pi\rho$ interaction constant A, from data on single photoproduction of pions from nucleons. The contribution of the ρ meson to the photoproduction amplitudes is separated by comparing the experimental data with theoretical calculations based on rigorous dispersion relations, since such an analysis is sensitive to the accuracy with which the dispersion integrals are calculated. The authors' main purpose in this paper is (i) to find for the photoproduction processes a differential characteristic for which the theoretical uncertainties are minimal or nil, and (ii) analyze the cor-

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L 12007-66

ACC NR: AP6001779 6

responding experimental data for the purpose of determining the constant A. To avoid the uncertainties connected with the imaginary parts of the photoproduction amplitudes, they confine themselves to a consideration of the near-threshold region of photon energies. The contribution of the subtraction constant is neglected. By making use of published data and their own results (Dokl. AN SSSR v. 158, 309, 1964) on the differential cross sections of the process $\gamma + p \rightarrow n + \pi^+$, the authors conclude that more accurate values of the differential cross sections of the processes $\gamma + p \rightarrow n + \pi^+$ and $\gamma + n \rightarrow p + \pi^-$ in the near-threshold region of energy can yield more definite information on the constant A. To obtain data on the latter process it is necessary to study further the processes $\gamma + d \rightarrow p + p + \pi^-$ and $\pi^- + p \rightarrow n + \gamma$. Authors are grateful to Corresponding Member AN SSSR P. A. Cherenkov and Professor A. M. Baldin for useful discussions and interest. Orig. art. has 2 figures and 6 formulas. 44/03

SUB CODE: 20/ SUBM DATE: 05Oct65/ ORIG REF: 003/ OTH REF: 002

Card 2/2

L 25975-66 EWT(l)/EEC(k)-2/EWA(h)

ACC NR: AP6015572 SOURCE CODE: UR/0146/66/009/002/0018/0020

AUTHOR: Aleksandrova, M. G.; Zelenkov, A. L.; Rudakov, V. N.; Lebedev, A. I.

ORG: Leningrad Electrotechnical Institute im. V. I. Ul'yanov (Lenin) (Leningradskiy elektrotekhnickeskiy institut)

TITLE: Universal device for observing and recording r-f fields

SOURCE: IVUZ. Priborostroyeniye, v. 9, no. 2, 1966, 18-20

TOPIC TAGS: diffraction camera, millimeter wave generator

ABSTRACT: An r-f diffraction instrument, the radiointroscope, has been developed at the Leningrad Electrotechnical Institute imeni Lenin for revealing structural details of test materials. The introscope consists of a millimeter wave klystron, transmitting and receiving antennas, and the associated detection and display units (see Fig. 1). A test sample is placed between the antennas in a frame, which is scanned according to the pattern shown to the right of the figure. The resulting diffraction pattern is detected and observed on a long-persistence scope or recorded on film. For a transmitted pattern the antennas are placed coaxially, as shown; for a reflected pattern they are placed side by side, with suitable decoupling. Fig. 2 shows a pattern received at $\lambda = 8$ mm from a polished disk [material not given], showing layering and a crack. Besides defect detection, the device can be used as a polariscope in dielectric studies; wavelengths of 4, 8 or 32 mm are obtained by changing

Card 1/3 UDC: 620.179.18

L 25975-66

ACC NR: AP6015572

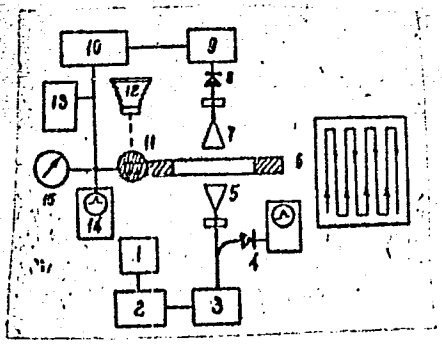

Fig. 1. Radiointroscope

1 - Square wave modulator; 2 - klystron supply; 3 - klystron; 4 - klystron monitor; 5-7 - antennas; 6 - scanned frame; 8 - detector; 9 - preamp; 10 - output amplifier; 11 - gas discharge tube; 12 - camera; 13 - oscillograph; 14 - defectoscope; 15 - meter.

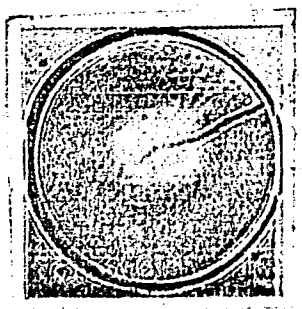

Fig. 2. Defectogram at λ = 8 mm/

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L 25975-66

ACC NR: AP6015572

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klystrons and antennas. The authors regard the introscope as a powerful tool in near-field diffraction studies, since theoretical analysis of this phenomenon is possible for only the most simple object geometries. Orig. art. has: 4 figures. [SH]

SUB CODE: 09/ SUBM DATE: 12Apr65/ ATD PRESS: 4257

Card 3/3 FW

L 10420-67 EWT(m)/EWP(j) IJP(c) RM

ACC NR: AP6029917 (A) SOURCE CODE: UR/0413/66/000/015/0088/0088

AUTHORS: Savinov, V. M.; Sokolov, L. B.; Lebedev, A. I. 21

ORG: none

TITLE: A method for obtaining polyamides. Class 39, No. 184441 [announced by Vladimir Scientific Research Institute of Synthetic Resins (Vladimirskiy nauchno-issledovatel'skiy institut sinteticheskikh smol)]

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 88

TOPIC TAGS: polyamide, polycondensation, emulsion

ABSTRACT: This Author Certificate presents a method for obtaining polyamides by polycondensation of dichloranhydrides of acids and diamines in a solution or emulsion. To complete the technological process, one of the monomers is taken in excess and is gradually introduced into the reactive zone.

SUB CODE: 07 / SUBM DATE: 24Apr64

Card 1/1 bjp

UDC: 678.675

LEBEDEV, A.I.

A way to reduce the amount of metal used in welded structures.
Trudy LPI no.245:98-101 '65. (MIRA 18:8)

LEBEDEV, A.I., assistent.

Laying shortened rails in curves. Trudy NIIZHT no.7:52-75 '49. (MLRA 9:10)

(Railroads--Curves and turnouts)

LEBEDEV, A.I., kandidat tekhnicheskikh nauk.

Method of designing track profiles in reconstructing railroads.
Transp.stroi. 6 no.11:18-23 N '56. (MLRA 10:1)
(Railroads--Tracks)

DZHGAMADZE, O.V., kand.tekhn.nauk; LAZEBNIKOV, Yu.S., kand.tekhn.nauk; LEBEDEV, A.I., kand.tekhn.nauk; GADEVAL'DT, V.V., inzh.; OZERSKIY, S.Z., inzh.

"Problems in planning of railroads with electric and diesel traction" by [prof.] A.I.Ionnisian and others. Reviewed by O.V.Dzhgamadze and others. Transp. stroi. 10 no.11:59-60 N '60. (MIRA 13:11)
(Railroad engineering) (Ioannisian, A.I.)
(Gorinov, A.V.) (Akimov, V.I.) (Kantor, I.I.)
(Kondratchenko, A.P.) (Savchenko, M.E.) (Turbin, I.V.)

GORINOV, Aleksandr Vasil'yevich, prof. Prinimali uchastiye: TURBIN, I.V., dotsent, kand.tekhn.nauk; KANTOR, I.I., dotsent, kand. tekhn.nauk; KONDRATCHENKO, A.P., dotsent, kand.tekhn.nauk; YEVREYSKOV, V.Ye., prof., retsenzent; LEBEDEV, A.I., dotsent, retsenzent; VOZNESENSKIY, G.D., dotsent, retsenzent; ISAKOV, L.M., dotsent, retsenzent; DZHGAMADZE, O.V., dotsent, retsenzent; CHERNYSHEV, G.P., inzh., retsenzent; MYSHKIN, G.N., inzh., retsenzent; ZAYTSEV, I.M., inzh., retsenzent; OZERETSKOVSKIY, V.P., inzh., retsenzent; ZARETSKIY, A.O., inzh., retsenzent; BUGROV, B.A., inzh., retsenzent; KOSTIN, I.I., prof., red.; BOBROVA, Ye.N., tekhn.red.

[Railroad surveying and designing] Izyskaniia i proektirovanie zheleznykh dorog. Moskva, Vses.izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia. Vol.1. Izd.4., perer. 1961. 336 p. (MIRA 14:4)

1. Chlen-korrespondent Akademii nauk SSSR (for Gorinov). 2. Kafedra "Proyektirovaniye i postroyka zheleznykh dorog" Novosibirskogo instituta inzhenerov zheleznodorozhnogo transporta (for Yevreyskov, Lebedev, Voznesenskiy, Isakov, Dzhgamadze). 3. Gosudarstvennyy proyektno-izyskatel'skiy institut "Gipropromtransstroy" (for Chernyshev, Myshkin, Zaytsev, Ozeretskovskiy, Zaretskiy, Bugrov).

(Railroad engineering)

LEBEDEV, A.I., kand. tekhn. nauk dotsent

Graphical analysis method for comparing alternate projects of design and planning. Trudy NIIZHT 26:3-16 '62. (MIRA 16:8)

(Railroad engineering) (Railroads—Finance)

LEBEDEV, A.I., kand. tekhn. nauk, dotsent; GOROKHOVA, G.S.; MARINA, Ye.Ye.

Potentials of the traffic capacity of railroads on smooth grade sections in case of electric and diesel traction. Trudy NIIZHT 26:49-61 '62. (MIRA 16:8)

(Railroad engineering)

REPREV, A.I.; ZAYTSEV, P.F.; STREL'NIKOV, V.N., inzh.; VOZNESENSKIY, G.D., kand.tekhn.nauk; ZHABOTINSKAYA, L.A., kand.tekhn.nauk; LEBEDEV, A.I.

New textbooks on surveying and designing railroads. Transp. stroi. 12 no.5:58-61 My '62. (MIRA 15:6)
(Railroad engineering)

LEBEDEV, A.I.

New films on poultry farming. Ptitsevodstvo 8 no.3:42-43 Mr '58.
(MIRA 11:2)

1. Starshiy ekonomist otdela sel'skokhozyaystvennykh fil'mov Ministerstva sel'skogo khozyaystva SSSR.
(Poultry) (Motion pictures in agriculture)

BUKSHTEYN, Mikhail Abramovich; LEBEDEV, A.I., red.; VLADIMIROV, Yu.V., red.izd-va; GINZBURG, R.Ya., tekhn. red.

[Manufacture of steel wire rope] Proizvodstvo stal'nykh kanatov. Moskva, Metallurgizdat, 1963. 330 p. (MIRA 16:10)
(Wire rope industry)

LEBEDEVA, Lyubov' Yakovlevna, kand. biol. nauk; LEBEDEV, Aleksandr Ivanovich, kand. sel'khoz. nauk; KAZ'MIN, G., kand. sel'khoz. nauk, otv. red.; SHAYKOVA, N., tekhn. red.

[Grapes in the Maritime Territory]Vinograd v Primorskom krae. Vladivostok, Primorskoe knizhnoe izd-vo, 1962. 157 p. (MIRA 16:3)

(Maritime Territory--Viticulture)

PLAKSIN, Igor' Nikolayevich; OKOLOVICH, Anna Mikhaylovna; DMITRIYEVA, Gali Mikhaylovna; MAKIYENKO, Ivan Ignat'yevich; KRYUKOVA, Nina Andreyevna; LEBEDEV, A.K., otv. red.; KACHALKINA, Z.I., red. izd-va; MAKSIMOVA, V.V., tekhn. red.; IL'INSKAYA, G.M., tekhn. red.

[New technology for the dressing of lead-zinc ores] Novaia tekhnologiia obogashcheniia svintsovo-tsinkovoi rudy. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1961. 127 p. (MIRA 15:1)

(Ore dressing)

S/137/62/000/001/006/237
A060/A101

AUTHORS: Gruzin, P.L., Babikova, Yu.F., Gerasimchuk, G.S., Lebedev, A.K., Rozhavskiy, G.S. Fedorov, G.B.

TITLE: The present state and future plans for the application of radioactive isotopes and nuclear radiations in metallurgy and mining industry

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 1, 1962, 6, abstract 1V42 (V sb. "Radioakt. izotopy i yadern. izlucheniya v nar. kh-ve SSSR, v. 3", Moscow, Gostoptekhizdat, 1961, 117 - 125)

TEXT: Radioactive isotopes are used at the Kuznetsk, Magnitogorsk, Donetskiy, Makeyevka plants, and also at "Azovstal'", the plant imeni Dzerzhinskiy, and others. The most promising directions of research are as follows: 1) the determination of the technological characteristics of steel smelting furnaces; 2) the study and control of the process of metal deformation; 3) the elaboration of special radiometric and activation methods for determining the degree of im-

Card 1/2

The present state and future plans ...

purity contamination of metals and semiconductors; 4) the study of the distribution of elements in diffusion microvolumes, of destruction processes, of loss of strength in metals, etc.

N. Yudina

[Abstracter's note: Complete translation]

Card 2/2

PETROV, N.A., red.; PETRENKO, L.I., red.; SAVITSKIY, P.S., red.; RUMYANTSEV, S.V., red. toma; TSEPAYEV, V.A., red.toma; GRUZIN, P.L., red. toma; LEBEDEV, A.K., red. toma; GERASIMCHUK, G.S., red. toma; MIGAY, L.S., vedushchiy red.; SHOROKHOVA, L.I., vedushchiy red.; IONEL', A.G., vedushchiy red.; MUKHINA, E.A., tekhn. red.

[Transactions of the Conference on Radioactive Isotopes and Nuclear Radiation in the National Economy of the U.S.S.R.] Trudy Vsesoiuznogo soveshchaniia po vnedreniiu radioaktivnykh izotopov i iadernykh izlu-chenii v narodnoe khoziaistvo SSSR. Riga, 1960, v chetyrekh tomakh. Pod red. N.A.Petrova, L.I.Petrenko i P.S.Savitskogo. Moskva, Gos. nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry. Vol.3.[Machinery industry. Metallurgy] Mashinostroenie. Metallurgiia. 1961. 224 p. (MIRA 14:5)

1. Vsesoyuznoye soveshchaniye po vnedreniyu radioaktivnykh izotopov i yadernykh izlucheniy v narodnom khozyaystve SSSR. Riga, 1960.
(Metal industries) (Radioisotopes—Industrial applications)

TRONOV, B.V.; LEBEDEV, A.K.

Synthesis of nitro derivatives of biphenyl. Zhur.VKHO 6 no.1:109-110 '61. (MIRA 14:3)

1. Tomskiy gosudarstvennyy universitet im.
(Biphenyl)

KULEV, L. P. [deceased]; SAL'SKIY, V. A.; LEBEDEV, A. K.; SHABROV, V. P.

Ozonolysis of a low-grade technical phenanthrene. Preparation of 3,8-dimetholy-4,5,6,7-dibenzo-1,2-dioxocyclooctane and 2'-formyldiphenyl-2-carboxylic acid. Zhur. VKHO 7 no.5:599-600 '62. (MIRA 15:10)

1. Tomskiy politekhnicheskiy institut.

(Phenanthrene) (Ozonization)

ACC NR: AP6034223 (N) SOURCE CODE: UR/0120/66/000/005/0085/0089

AUTHOR: Vorob'yev, A. A.; Korolev, G. A.; Lebedev, A. K.

ORG: Physico-Technical Institute, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Secondary emission shf detector of heavy charged particles

SOURCE: Pribory i tekhnika eksperimenta, no. 5, 1966, 85-89

TOPIC TAGS: secondary emission, particle detector, ~~nuclear~~ heavy particle, charged particle

ABSTRACT: A time detector of heavy charged particles based on the use of secondary emission is described. The charged particle passes through thin aluminum foil and knocks out secondary electrons which are directed to a shf cavity. The shf field generated in the cavity modulates the energy of passing particles. An electrostatic spectrometer analyses particles in respect to their energies. This permits separation of particles which passed through the cavity at the fixed phase of the shf field. A secondary emission multiplier was used as an electron detector. The combination consisting of the electrostatic spectrometer and the secondary emission multiplier provides the energetic resolution of 10%. The equipment has been tested using α-particles with 5 Mev for energy. Time resolution was about 2×10^{-11} sec.; recording effectiveness was 8%. The equipment was designed to measure the life time of nuclear levels which develop during α-particles disintegration. Orig. art. has: 8 figures.

SUB CODE: 09/ SUBM DATE: 020ct65/ ORIG REF: 001/ OTH REF: 006

Card 1/1 UDC: 539.1.074

Z/011/62/019/001/007/017
E073/E136

AUTHOR: Lebedev, A.Kh. and Suykin, N.I.

TITLE: Catalytic alkylation of tetralin in the presence of metallic aluminium

PERIODICAL: Chemie a chemická technologie. Přehled technické a hospodářské literatury, v.19, no.1, 1962, 32, abstract Ch 62-439. (Neftekhimiya, v.1, no.1, 1961, 39-45).

TEXT: The conditions of alkylation of tetralin with n-butyl-, n-heptyl- and n-octylbromide in the presence of metallic aluminium were studied. The main reaction products were 6-alkyltetralin in addition to 6,7-dialkyltetralin. The length of the chain had no influence on the position of the substituent.
[Abstractor's note: In the original Russian paper this last sentence reads: The chain length has no influence on the yield of 6-alkyltetralin. The Czech abstract is probably wrong.]
4 tables, 47 references.
[Abstractor's note: Complete translation.]

Card 1/1

LEBEDEV, A.M., kand.tekhn.nauk; OBUKHOV, A.V., inzh.

Testing of overhead machines for the electric resistance welding of rails on the track. Trudy TSNII MPS no.224:194-214 '62.
(MIRA 16:6)

(Railroads--Rails--Welding)

NAYDIS, V.A., kand.tekhn.nauk; LEBEDEV, A.M., inzh.; NOVIKOV, V.V., inzh.

Regulated d.c. drives with transistor rectifiers. Elektrichestvo no.11:83-87 N '62. (MIRA 15:11)

1. Eksperimental'nyy nauchno-issledovatel'skiy institut metallorezhushchikh stankov.
(Electric motors, Direct current)

LEBEDEV, A. M., Cand of Med Sd -- (diss) "Fascia and Cellular Space of the Peritoneal Region," Moscow, 1959, 16 pp (1st Moscow Medical Institute im Sechenov) (KL, 5-60, 130)

LEBEDEV, A.M.

Problem of renal fascia. Urologiia 24 no.6:8-14 '59. (MIRA 13:12)
(KIDNEYS)

S/058/61/000/010/017/100
A001/A101

3.2410

AUTHORS: Grigorov, N.L., Guseva, V.V., Dobrotin, N.A., Lebedev, A.M., Kotel'nikov, K.A., Murzin, V.S., Rappoport, P.D., Ryabikov, S.V., Slavatinskiy, S.A.

TITLE: Studying nucleon-nucleon interactions at $\sim 2 \times 10^{11}$ ev energies

PERIODICAL: Referativnyy zhurnal. Fizika, no. 10, 1961, 96, abstract 10B501 ("Tr. Mezhdunar. konferentsii po kosmich. lucham, 1959, v. 1", Moscow, AN SSSR, 1960, 140 - 153)

TEXT: The authors present the results of an investigation, by means of the "calorimetric" method, of nucleon-nucleon interactions at energies of $\sim 2 \times 10^{11}$ ev, conducted at Pamir (3,860 m above sea level). They describe the equipment for determining the energy of primary particles, energy distribution of secondary particles, inelasticity coefficient, and present data on correlated pairs, angular distributions of particles in individual interactions, and consider in detail symmetric and non-symmetric showers.

L. Dorman

[Abstracter's note: Complete translation]

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LEBEDEV, A.M., SLAVATINSKY, S.A., DOBROTIN, N.A., GUSEVA, V.V., ZELEVINSKAYA, N.G., and KOTELINKOV, K.A.,

"Experimental Data on Nucleon-Nucleon-Interaction at the Energy of Hundreds of GeV and Their Interpretation,"

report presented at the Intl. Conference on Cosmic Rays and Earth Storms, Kyoto, Japan, 4-15 Sept 1961.

LEBEDEV, A.M.; TROITSKIY S.G.; SHASHKIN, V.L.

Scale factor for the quantitative interpretation of gamma-ray logging. Atom.energ. 10 no.4:394-396 Ap '61. (MIRA 14:4)
(Logging (Geology)) (Gamma rays)

LEBEDEV, A.M. 2

24.6700

S/048/62/026/005/001/022
B102/B104

AUTHORS: Guseva, V. V., Dobrotin, N. A., Zelevinskaya, N. G., Kotel'nikov, K. A., Lebedev, A. M., and Slavatinskiy, S. A.

TITLE: Experimental data on nucleon-nucleon interactions at ~100 Bev and their interpretation

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 5, 1962, 549 - 557

TEXT: Experimental data on NN-interactions, obtained by a team of the Laboratory of Cosmic Rays of the Physics Institute AS USSR at its Pamir station (3860 m), are discussed. Photographs of such interactions revealed the presence of showers with asymmetric particle emission in the c.m.s. Of 48 showers, 18 showed marked asymmetry. The data obtained with the arrangement shown in Fig. 1 were evaluated by conventional statistical methods and also by the Monte-Carlo method. It is shown that the probability of asymmetric showers being caused by fluctuations in the meson angular distribution does not exceed some per cent. The fact that the shower symmetry depends on the inelasticity ratio of the interacting nucleons

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Experimental data on... S/048/62/026/005/001/022
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allows NN-interactions to be divided into three classes: (1) symmetric showers with small and approximately equal coefficients of inelasticity K_{lab} and K_{mirror}; (2) asymmetric showers with very different coefficients; and (3) symmetric showers with both coefficients being large ($K>0.4$). It is explicitely shown that the experimental results can be interpreted with the aid of a simple structural model of interactions for the above classes: (1) peripheral-- peripheral interactions; (2) peripheral - central interactions; and (3) central - central interactions. In collisions of class (2), for example, the periphery of one nucleon is assumed to interact with the center of the other. The data obtained also show that an excited meson cloud appears in ~100 Bev NN-collisions, which does not contain the colliding nucleons. In general, this cloud moves slowly relative to the c.m.s., and decomposes isotropically when its temperature reaches a value $T \sim \mu_\pi$. The "spectrum" of the radiation or energy distribution of the mesons is comparable with that of an absolutely black body. There are 12 figures.

ASSOCIATION: Laboratoriya kosmicheskikh luchey Fizicheskogo instituta im. P. N. Lebedeva Akademii nauk SSSR (Laboratory of Cosmic Rays of the Physics Institute imeni P. N. Lebedev of the Academy of Sciences, USSR)

Card 2/5

. GUSEVA, S. A. DUBROVINA, A. M. LEBEDEV, N. E. MOROZOV, L. A. SANKO,
. SOKOLOVSKIY, S. A. SLAVATINSKIY, P. V. TOLKACHEV

Analysis of Experimental Data on Interactions of Nucleions and Atomic Nuclei at High Energies

Report submitted for the 8th Intl. Conf. on Cosmic Rays (IUPAP). Jaipur India, 2-14 Dec 1963

[illegible] EWT(m)/[illegible] [illegible]

[illegible] AP4049067 [illegible]

[illegible] Guseva, V.V.; Dubrovina, [illegible] [illegible] Sarkis, [illegible] A.
[illegible], V.V.; Slavatinskiy, S.A.; [illegible], S.V.

[illegible] Nucleon-nucleus collisions at [illegible] Report, All-Union Conference [illegible] Physics of Cosmic Rays held [illegible] 1963

SOURCE: AN SSSR. Izv. Seriya fizicheskaya, v.28, no.11, 1964, 1761-1763

TOPIC TAGS: cosmic ray, high energy interaction, nucleon nucleus interaction, hydrodynamic theory

ABSTRACT: The work presents an attempt to describe the interaction of high-energy (10^{11} to 10^{12}) nucleons with complex nuclei from the standpoint of a succession of [illegible] independent encounters of the incident particle with the nucleons of [illegible] nucleus. The nucleon [illegible] were calculated by the [illegible] electr[illegible] scattering [illegible] method of impact parameter[illegible] calculations were carried out [illegible] to evaluate the [illegible] 122 and 207. The [illegible] cross sections for nuclei with [illegible]

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L 24711-65

ACCESSION NR: AP4049587

... values of σ are in good agreement with the ... ... $\sigma = ...^{3/4}$, ... The agreement is best (but ... the assumption ... an inelasticity coefficient 0.35 ($\bar{K}_0$ = 0.65). The values of the anisotropy parameter (proportional to $\sigma/\sigma_{isotropic}$) as a function of the jet multiplicity n_s (which may be ... a measure of the length of the ... or the number of nucleons with which the incident particle interacts) ... interpolation of the experimental data are compared in Fig.2 of the ... with the functional dependence ... on the basis of hydrodynamic theory ... The disagreement ... is interpreted as an argument in favor of the assumption of successive interaction of the incident nucleon with the nuclear nucleons. "The authors are grateful to N.A.Dobrotin, Ye.L.Feynberg, G.B.Zhdanov and D.S.Chernavskiy for discussions and valuable suggestions." Orig. art. has: 4 formulas and 2 tables.

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L 34714-65

ACCESSION NR: AP4049587

ASSOCIATION: Fizicheskiy institut im.P.N.Lebedeva Akademii nauk SSSR (Physics Institute, Academy of Sciences, SSSR)

SUBMITTED: 00 ENCL: 01

SUB CODE: AA, NP NR REF SOV: 007 OTHER: 002

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L 34714-65

ACCESSION NR: AP4049587

ENCLOSURE: 01

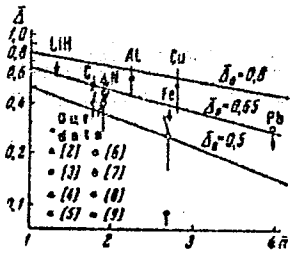

Fig.1. Mean fraction of the energy retained by the nucleon after interaction with different nuclei. Points - experimental (the numbers in brackets are the references from which the data were taken); lines - results of calculations for Δ_0 = 0.8, 0.65 and 0.5.

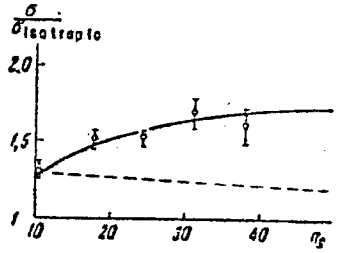

Fig.2. Variation of $\sigma/\sigma_{isotropic}$ with n_s. Solid line - interpolation of experimental data; dashed line - calculations based on the hydrodynamic theory.

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ACCESSION NR: AP4042580 S/0056/64/046/006/2151/2155

AUTHORS: Lebedev, A. M.; Slavatinskiy, S. A.; Tolkachev, B. V.

TITLE: Interaction cross section and energy fraction retained by nucleons in collisions with complex nuclei

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 6, 1964, 2151-2155

TOPIC TAGS: nucleon, nucleon scattering, nuclear structure, nucleus, inelastic scattering

ABSTRACT: In view of recent deductions that the nucleons are not uniformly distributed in nuclei, and in view of the more accurate values of the mean square radius of the nucleon and of the elementary cross section obtainable from measurements with accelerators, the authors calculate cross sections for the inelastic interaction of nucleons with complex nuclei on the basis of the optical model of the nucleus. The dependence of the interaction cross section on the

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atomic weight of the nucleus of the target is evaluated with allowance for the nuclear structure and by using more refined data on the elementary cross sections. The obtained dependence of the cross section on the atomic weight of the target nucleus, $\sigma = \sigma_0 A^{3/4}$, is in good agreement with the experimental data, over a wide range of energies, from $\sim 10^{10}$ to $\sim 10^{12}$ eV. The values calculated on the basis of the model of successive collisions between the nucleon and the nucleons of the nucleus yield for the fraction of the energy retained by the nucleon after interaction with complex nuclei values which do not disagree with the measurement results. The authors calculate the multiplicity of the collisions for different nuclei, as well as the fraction of the energy retained by the nucleon after the interaction. "In conclusion the authors are deeply grateful to N. A. Dobrotin for continuous interest in the work and for stimulating it, to Ye. L. Feynberg and A. Ye. Chudakov for useful advice,

ACCESSION NR: AP4042580

and to Z. S. Maksimova for carrying out many numerical calculations."
Orig. art. has: 3 figures and 10 formulas.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute, Academy of Sciences SSSR)

SUBMITTED: 20Dec63 DATE ACQ: ENCL: 00

SUB CODE: NP NR REF SOV: 010 OTHER: 008

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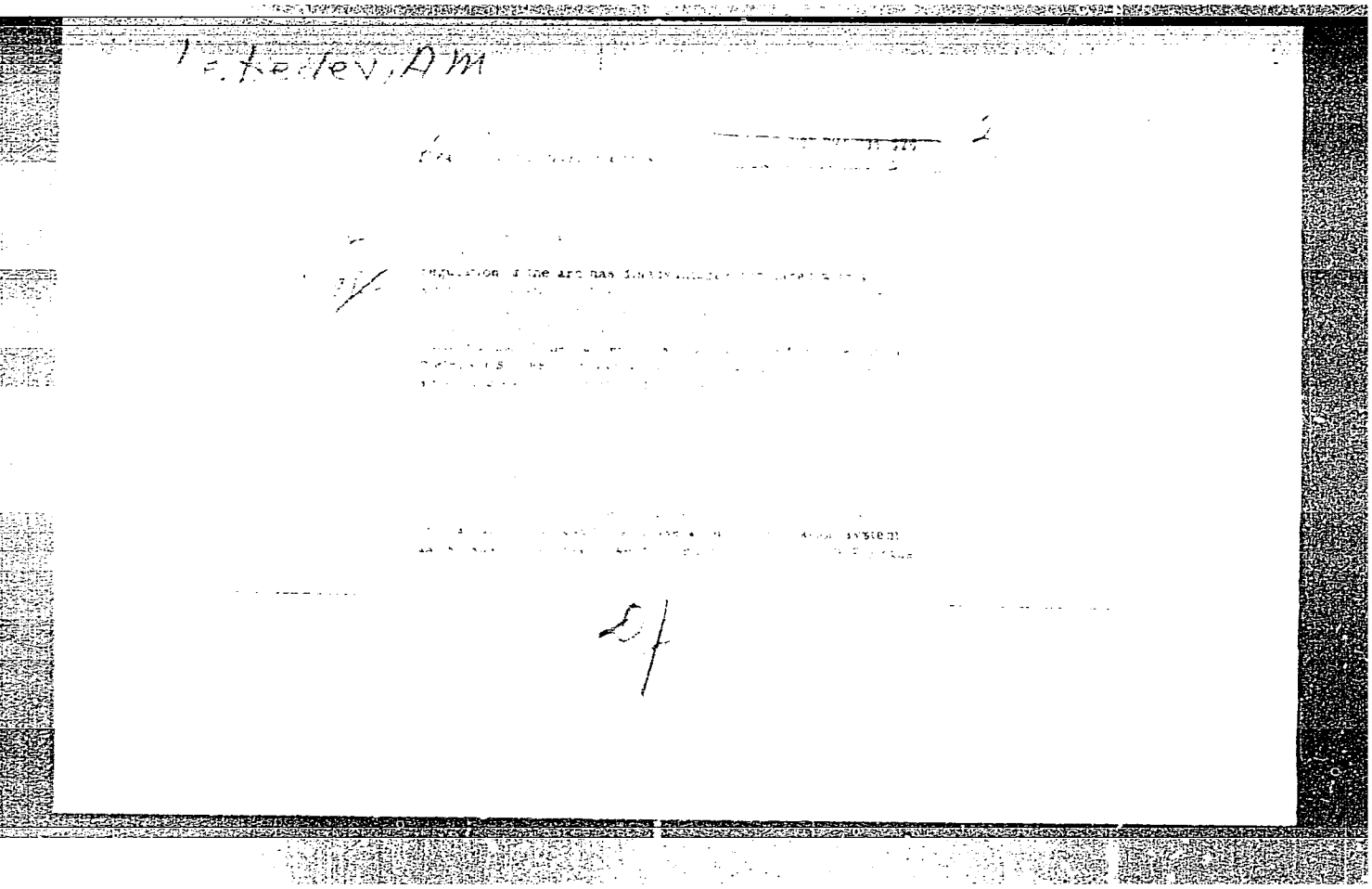
GUSEVA, V.V.; LEBEDEV, A.M.; SLAVATINSKIY, S.A.; SOKOLOVSKIY, V.V.

Interaction between nucleons and complex nuclei at high energies.
Izv. AN SSSR.Ser.fiz. 29 no.10:1935-1937 O '65.

(MIRA 18:10)



LEBEDEV, A.M., inzhener.

Mechanical indicator for adjusting the power supply for alternating current automatic welding. Vest.elektroprom. 27 no.2:66-67 F '56. (MLRA 9:7)

1.Institut metallurgii imeni A.A.Baykova AN SSSR.
(Electric welding)

LEBEDEV, A. M.

"Semiconductor switches."

Programmed Control of Metal Cutting Machines. report presented at All-Union Conference, Moscow, 13-16 Nov 1957
Vestnik Ak, Nauk SSSR, 1958, No. 2, pp. 113-115, (author Kobrinskiy, A. Ye.)

LEBEDEV, A.M., elektroslesar'

Automatic water drainage using an electrode level gauge and cableless alarm signal system. Ugol' Ukr. 3 no.9:34-36 S '59. (MIRA 13:2)

1. Shakhta No.13 tresta Kuybyshevugol'.
(Mine drainage) (Automatic control)

LEBEDEV, A.M.

PHASE I BOOK EXPLOITATION SOV/4715

Grigor'yev, Sergey Sergeyevich, and Anatoliy Maksimovich Lebedev

Avtomaticheskaya naladka i podnaladka stankov i instrumentov v avtomaticheskikh liniyakh i stankakh-avtomatakh (Automatic Setup and Setup Adjustment of Machines and Tools in Automatic Lines and Automatic Machine Tools) Minsk, Belgiz, 1960. 178 p. 3,000 copies printed.

Ed.: F. Kashtanov; Tech. Ed.: N.Stepanova.

PURPOSE: This book is intended for technical and scientific personnel, production innovators, and students at technical schools of higher education interested in automation in the machine-building industry.

COVERAGE: The authors review various works devoted to problems of the investigation and practical application of automatic setup and setup adjustments of cutting tools for metal-cutting machine tools. The practical work was carried out by coworkers at the Laboratory of Automation and Mechanization of Manufacturing Processes in the Machine-Building Industry at the Institut mashinovedeniya AN BSSR (Institute of the Science of Machines of the Academy of Sciences

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Automatic Setup and Setup Adjustment (Cont.) SOV/4715

Belorussian SSR). Chapters III, IV, and VI were written by Engineer S.S. Grigor'yev. Engineer A.M. Lebedev wrote Chapters I, II, and V. The book was compiled with the supervision and assistance of G.K. Goranskiy, Candidate of Technical Sciences. There are 120 references: 95 Soviet, 24 English, and 1 German.

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BROVMAN, Yakov Semenovich; KAGAN, Valeriy Gennadiyevich; KOCHUBIYEVSKIY, Feliks Davydovich; NAYDIS, Veniamin Abramovich; CHILIKIN, M.G., red.; LEBEDEV, A.M., red.

[Direct current systems with amplidyne amplifiers] Sistemy postoiannogo toka s elektromashinnymi usiliteliami. Moskva, Energiia, 1964. 79 p. (Biblioteka po avtomatike, no.119; elektroprivody s poluprovodnikovym upravleniem) (MIRA 18:1)

LEBEDEV, A.M.

Treatment of severe craniocerebral trauma. Nauch.trudy Ryaz.med. inst. 18 no.2:171-177 '64. (MIRA 19:1)

1. Kafedra obshchey khirurgii (zav. - prof. Ye.G.Gurova) Ryazanskogo meditsinskogo instituta.

LEBEDEV, A.M., kand.tekhn.nauk; PAVLOV, N.V., inzh.

Welding of the switch rails of the switch assembly. Trudy TSNII MPS no.260:144-151 '63.

Contact welding of rails with hard surfacing. 152-160
(MIRA 16:11)

MAGULA, Valentin Emmanuilovich, kand. tekhn. nauk; DRUZ', Boris Ivanovich, kand. tekhn. nauk; KULAGIN, Vitaliy Dmitriyevich, kand. tekhn. nauk; Prinimal uchastiye LUKIN, G.Ya., kand. tekhn. nauk; GORYANSKIY, Yu.V., dots., retsenzent; GULIYEV, Yu.M., dots., retsenzent; KOKHANOVSKIY, K.V., dots., retsenzent; LEBEDEV, A.M., dots., retsenzent; SPITKOVSKIY, M.I., dots., retsenzent; VASIL'YEV, I.V., dots., retsenzent; SERKO, G.S., red.; TIKHONOVA, Ye.A., tekhn.red.

[Theory and the structural arrangement of ships] Teoriia i ustroistvo sudov. Moskva, Izd-vo "Morskoi transport," 1963. 494 p. (MIRA 17:3)